

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A deposit monitoring apparatus located in a hydrocarbon wellbore comprising:
 - an acoustic device for operating in a resonance mode which is longitudinal including a monitoring surface directly exposed to fluids in a hydrocarbon wellbore, wherein the deposition of material on the monitoring surface is monitored by measuring a change in resonance frequency of the acoustic device; and
 - a power supply for supplying said acoustic device with electrical energy.
2. (original) The apparatus of claim 1, wherein the acoustic device is mounted either permanently or quasi-permanently in the wellbore.
3. (cancelled)
4. (previously presented) The apparatus of claim 1, wherein the acoustic device further comprises a transducer, and a focussing element coupled to the transducer.
5. (original) The apparatus of claim 4, wherein the focussing element is an acoustic horn.
6. (original) The apparatus of claim 1, wherein the resonance frequency of the acoustic device is in the range of 10 kHz to 150 kHz.
7. (original) The apparatus of claim 6 wherein the resonance frequency of the acoustic device is in the range of 50 kHz to 100 kHz.
8. (original) The apparatus of claim 1, wherein the monitoring surface is located on or near one of the following devices switches, valves, sleeves, mandrels, downhole separators and sensors located in the wellbore.

9. (previously presented) The apparatus of claim 1 further comprising a deposit removal system for at least partially removing the deposition from the monitoring surface, the deposit removal system being in a control loop with said deposit monitor.

10. (original) The apparatus of claim 9, wherein the deposit removal system includes a deposition inhibiting or removing chemical agent.

11. (original) The apparatus of claim 9, wherein the deposit removal system uses the acoustic device to exert a physical force onto the deposited material.

12. (currently amended) The apparatus of claim 9, wherein the deposition removal system is near a sensor having a surface exposed to the fluids and the deposition removal system is ~~adapted to remove~~ for removing deposits from said exposed surface.

13. (original) The apparatus of claim 12, wherein the sensor is selected from a group comprising optical sensors, electro-chemical sensors, or acoustic sensors.

14. (previously presented) The apparatus of claim 12, wherein the exposed sensor surface is selected from a group comprising optical windows, membranes, or sensitive areas of acoustic sensors.

15. (previously presented) The apparatus of claim 1, comprising an additional sensing system to analyze material deposited on the monitoring surface.

16. (cancelled)

17. (cancelled)

18. (cancelled)

19. (currently amended) ~~The apparatus of claim 18~~ A monitoring apparatus located in a hydrocarbon wellbore, comprising:

a monitor for measuring characteristics of fluids in the hydrocarbon wellbore
the monitor having a monitoring surface that is directly exposed to fluids in the
hydrocarbon wellbore;

a deposit removal system including an acoustic device for exerting a physical
force on the monitoring surface to at least partially remove a deposition of material
from the monitoring surface; and

a power supply for supplying said acoustic device with electrical energy, wherein the
monitor further comprises an acoustic device for operating in a resonance mode, wherein the
monitor measures deposition of the material on the monitoring surface by measuring a
change in resonance frequency of the acoustic device of the monitor and wherein the acoustic
device operates in a longitudinal mode.

20. (currently amended) The apparatus of claim ~~18~~ 19, wherein the acoustic device further comprises a transducer, and a focussing element coupled to the transducer.

21. (currently amended) The apparatus of claim ~~18~~ 19, wherein the resonance frequency of the acoustic device is in the range of 10 kHz to 150 kHz.

22. (currently amended) The apparatus of claim ~~18~~ 19, wherein the deposit removal system includes a deposition inhibiting or removing chemical agent.

23. (cancelled)

24. (cancelled)

25. (currently amended) The apparatus of claim ~~16~~ 19, wherein the monitor is selected from a group comprising optical sensors, electro-chemical sensors, or acoustic sensors separate from the force exerting acoustic device.

26. (currently amended) The apparatus of claim ~~16~~ 19, wherein the monitor is a gamma ray density measurement system.

27. (previously presented) The apparatus of claim 26 wherein the monitoring surface is a nuclear window.

28. (currently amended) The apparatus of claim ~~16~~ 19, wherein the monitor is an optical fluid analyzer.

29. (previously presented) The apparatus of claim 28 wherein the monitoring surface includes an optical window.

30. (currently amended) The apparatus of claim ~~16~~ 19, wherein the monitor is used to measure activity of an ionic species contained in the wellbore fluid.

31. (previously presented) The apparatus of claim 30 wherein the monitoring surface is a membrane of an ion selective electrode.

32. (currently amended) The apparatus of claim ~~16~~ 19, wherein the monitoring surface is a separation membrane.

33. (cancelled)

34. (cancelled)

35. (cancelled)

36. (currently amended) ~~The apparatus of claim 34~~ A deposit monitoring apparatus located in a hydrocarbon wellbore comprising:

an acoustic device for operating in a resonance mode including a monitoring surface directly exposed to fluids in a hydrocarbon wellbore, wherein the deposition of material on the monitoring surface is monitored by measuring a change in resonance frequency of the acoustic device, and wherein by measuring said change in resonance frequency of the acoustic device a thickness of deposited material of 600

microns can be distinguished from a thickness of deposited material of 1050 microns;
and
a power supply for supplying said acoustic device with electrical energy, wherein the
acoustic device operates in a longitudinal mode.

37. (previously presented) The apparatus of claim 36, wherein the acoustic device further comprises a transducer, and an acoustic horn coupled to the transducer.

38. (currently amended) The apparatus of claim ~~34~~ 36, wherein the resonance frequency of the acoustic device is in the range of 10 kHz to 150 kHz.

39. (cancelled)

40. (cancelled)

41. (cancelled)